DRAGSTER 80

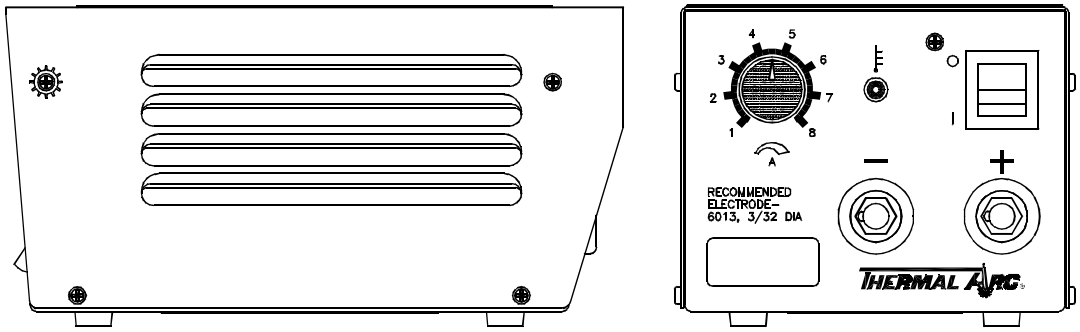
80Amp Inverter
Power Source

For the Following Specs:

- 100040-1

THERMAL ARC®

A THERMADYNE® Company



OWNER'S MANUAL Number **430429-440** (Rev AA)
Revised November 29, 1999

IMPORTANT: Read these instructions before installing, operating, or servicing this system.

THERMAL ARC INC., TROY, OHIO 45373-1085, U.S.A.

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INTRODUCTION

How To Use This Manual

This Owner's Manual applies to the specification or part numbers listed on the cover.

To ensure safe operation, read the entire manual, including the chapter on safety instructions and warnings.

Throughout this manual, the word **WARNING, CAUTION,** and **NOTE** may appear. Pay particular attention to the information provided under these headings. These special annotations are easily recognized as follows:

WARNING: A procedure which, if not properly followed, may cause injury to the operator or others in the operating area. Warnings will be enclosed in a box such as this.

CAUTION: A procedure which, if not properly followed, may cause damage to the equipment. Cautions will be shown in bold type.

NOTE: An operation, procedure, or background information which requires additional emphasis or is helpful in efficient operation of the system. Notes will be shown in italics.

Equipment Identification

The unit's identification number (specification or part number), model, and serial number usually appear on a nameplate attached to the machine. Equipment which does not have a nameplate attached to the machine is identified only by the specification or part number printed on the shipping container. Record these numbers for future reference.

Receipt Of Equipment

When you receive the equipment, check it against the invoice to make sure it is complete and inspect the equipment for possible damage due to shipping. If there is any damage, notify the carrier immediately to file a claim. Furnish complete information concerning damage claims or shipping errors to Thermal Arc, Order Department, 2200 Corporate Drive, Troy, Ohio 45373-1085. Include all equipment identification numbers as described above along with a full description of the parts in error.

Additional copies of this manual may be purchased by contacting Thermal Arc at the address given above. Include the Owner's Manual number and equipment identification numbers.

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ARC WELDING SAFETY INSTRUCTIONS AND WARNINGS

⚠ WARNING

ARC WELDING can be hazardous.

PROTECT YOURSELF AND OTHERS FROM POSSIBLE SERIOUS INJURY OR DEATH. KEEP CHILDREN AWAY. PACEMAKER WEARERS KEEP AWAY UNTIL CONSULTING YOUR DOCTOR. DO NOT LOSE THESE INSTRUCTIONS. READ OPERATING/INSTRUCTION MANUAL BEFORE INSTALLING, OPERATING OR SERVICING THIS EQUIPMENT.

Welding products and welding processes can cause serious injury or death, or damage to other equipment or property, if the operator does not strictly observe all safety rules and take precautionary actions.

Safe practices have developed from past experience in the use of welding and cutting. These practices must be learned through study and training before using this equipment. Anyone not having extensive training in welding and cutting practices should not attempt to weld. Certain of the practices apply to equipment connected to power lines; other practices apply to engine driven equipment.

Safe practices are outlined in the American National Standard Z49.1 entitled: SAFETY IN WELDING AND CUTTING. This publication and other guides to what you should learn before operating this equipment are listed at the end of these safety precautions.

HAVE ALL INSTALLATION, OPERATION, MAINTENANCE, AND REPAIR WORK PERFORMED ONLY BY QUALIFIED PEOPLE.

ELECTRIC SHOCK can kill.

Touching live electrical parts can cause fatal shocks or severe burns. The electrode and work circuit is electrically live whenever the output is on. The input power circuit and machine internal circuits are also live when power is on. In semiautomatic or automatic wire welding, the wire, wire reel, drive roll housing, and all metal parts touching the welding wire are electrically live. Incorrectly installed or improperly grounded equipment is a hazard.

1. Do not touch live electrical parts.
2. Wear dry, hole-free insulating gloves and body protection.
3. Insulate yourself from work and ground using dry insulating mats or covers.
4. Disconnect input power or stop engine before installing or servicing this equipment. Lock input power disconnect switch open, or remove line fuses so power cannot be turned on accidentally.
5. Properly install and ground this equipment according to its Owner's Manual and national, state, and local codes.
6. Turn off all equipment when not in use. Disconnect power to equipment if it will be left unattended or out of service.
7. Use fully insulated electrode holders. Never dip holder in water to cool it or lay it down on the ground or the work surface. Do not touch holders connected to two welding machines at the same time or touch other people with the holder or electrode.
8. Do not use worn, damaged, undersized, or poorly spliced cables.
9. Do not wrap cables around your body.
10. Ground the workpiece to a good electrical (earth) ground.
11. Do not touch electrode while in contact with the work (ground) circuit.
12. Use only well-maintained equipment. Repair or replace damaged parts at once.
13. In confined spaces or damp locations, do not use a welder with AC output unless it is equipped with a voltage reducer. Use equipment with DC output.
14. Wear a safety harness to prevent falling if working above floor level.
15. Keep all panels and covers securely in place.

ARC RAYS can burn eyes and skin; NOISE can damage hearing.

Arc rays from the welding process produce intense heat and strong ultraviolet rays that can burn eyes and skin. Noise from some processes can damage hearing.

1. Wear a welding helmet fitted with a proper shade of filter (see ANSI Z49.1 listed in Safety Standards) to protect your face and eyes when welding or watching.
2. Wear approved safety glasses. Side shields recommended.
3. Use protective screens or barriers to protect others from flash and glare; warn others not to watch the arc.
4. Wear protective clothing made from durable, flame-resistant material (wool and leather) and foot protection.
5. Use approved ear plugs or ear muffs if noise level is high.

Eye protection filter shade selector for welding or cutting (goggles or helmet), from AWS A6.2-73.

Welding or Cutting Operation	Electrode Size Metal Thickness or Welding Current	Filter Shade No.
Torch soldering	—	2
Torch brazing	—	3 or 4
Oxygen cutting		
Light	Under 1 in., 25 mm	3 or 4
Medium	1 to 6 in., 25-150 mm	4 or 5
Heavy	Over 6 in., 150 mm	5 or 6
Gas welding		
Light	Under 1/8 in., 3 mm	4 or 5
Medium	1/8 to 1/2 in., 3-12 mm	5 or 6
Heavy	Over 1/2 in., 12 mm	6 or 8
Shielded metal-arc welding	Under 5/32 in., 4 mm	10
(stick) electrodes	5/32 to 1/4 in., 4 to 6.4 mm	12
	Over 1/4 in., 6.4 mm	14

Welding or Cutting Operation	Electrode Size Metal Thickness or Welding Current	Filter Shade No.
Gas metal-arc welding (MIG)		
Non-ferrous base metal	All	11
Ferrous base metal	All	12
Gas tungsten arc welding	All	12
(TIG)	All	12
Atomic hydrogen welding	All	12
Carbon arc welding	All	12
Plasma arc welding		
Carbon arc air gouging		12
Light		14
Heavy		
Plasma arc cutting	Under 300 Amp	
Light	300 to 400 Amp	9
Medium	Over 400 Amp	12
Heavy		14

FUMES AND GASES can be hazardous to your health.

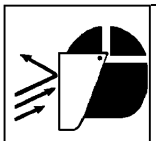
Welding produces fumes and gases. Breathing these fumes and gases can be hazardous to your health.

1. Keep your head out of the fumes. Do not breath the fumes.
2. If inside, ventilate the area and/or use exhaust at the arc to remove welding fumes and gases.
3. If ventilation is poor, use an approved air-supplied respirator.
4. Read the Material Safety Data Sheets (MSDSs) and the manufacturer's instruction for metals, consumables, coatings, and cleaners.
5. Work in a confined space only if it is well ventilated, or while wearing an air-supplied respirator. Shielding gases used for welding can displace air causing injury or death. Be sure the breathing air is safe.
6. Do not weld in locations near degreasing, cleaning, or spraying operations. The heat and rays of the arc can react with vapors to form highly toxic and irritating gases.
7. Do not weld on coated metals, such as galvanized, lead, or cadmium plated steel, unless the coating is removed from the weld area, the area is well ventilated, and if necessary, while wearing an air-supplied respirator. The coatings and any metals containing these elements can give off toxic fumes if welded.

WELDING can cause fire or explosion.

Sparks and spatter fly off from the welding arc. The flying sparks and hot metal, weld spatter, hot workpiece, and hot equipment can cause fires and burns. Accidental contact of electrode or welding wire to metal objects can cause sparks, overheating, or fire.

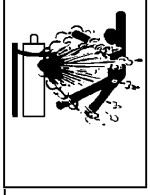
1. Protect yourself and others from flying sparks and hot metal.
2. Do not weld where flying sparks can strike flammable material.
3. Remove all flammables within 35 ft (10.7 m) of the welding arc. If this is not possible, tightly cover them with approved covers.
4. Be alert that welding sparks and hot materials from welding can easily go through small cracks and openings to adjacent areas.
5. Watch for fire, and keep a fire extinguisher nearby.
6. Be aware that welding on a ceiling, floor, bulkhead, or partition can cause fire on the hidden side.
7. Do not weld on closed containers such as tanks or drums.
8. Connect work cable to the work as close to the welding area as practical to prevent welding current from traveling long, possibly unknown paths and causing electric shock and fire hazards.
9. Do not use welder to thaw frozen pipes.
10. Remove stick electrode from holder or cut off welding wire at contact tip when not in use.



FLYING SPARKS AND HOT METAL can cause injury.

Chipping and grinding cause flying metal. As welds cool, they can throw off slag.

1. Wear approved face shield or safety goggles. Side shields recommended.
2. Wear proper body protection to protect skin.



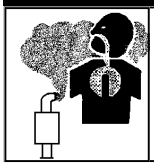
CYLINDERS can explode if damaged.

Shielding gas cylinders contain gas under high pressure. If damaged, a cylinder can explode. Since gas cylinders are normally part of the welding process, be sure to treat them carefully.

1. Protect compressed gas cylinders from excessive heat, mechanical shocks, and arcs.
2. Install and secure cylinders in an upright position by chaining them to a stationary support or equipment cylinder rack to prevent falling or tipping.
3. Keep cylinders away from any welding or other electrical circuits.
4. Never allow a welding electrode to touch any cylinder.
5. Use only correct shielding gas cylinders, regulators, hoses, and fittings designed for the specific application; maintain them and associated parts in good condition.
6. Turn face away from valve outlet when opening cylinder valve.
7. Keep protective cap in place over valve except when cylinder is in use or connected for use.
8. Read and follow instructions on compressed gas cylinders, associated equipment, and CGA publication P-1 listed in Safety Standards.

⚠ WARNING

ENGINES can be hazardous.



ENGINE EXHAUST GASES can kill.

Engines produce harmful exhaust gases.

1. Use equipment outside in open, well-ventilated areas.
2. If used in a closed area, vent engine exhaust outside and away from any building air intakes.

ENGINE FUEL can cause fire or explosion.

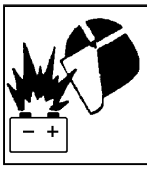
Engine fuel is highly flammable.

1. Stop engine before checking or adding fuel.
2. Do not add fuel while smoking or if unit is near any sparks or open flames.
3. Allow engine to cool before fueling. If possible, check and add fuel to cold engine before beginning job.
4. Do not overfill tank — allow room for fuel to expand.

MOVING PARTS can cause injury.

Moving parts, such as fans, rotors, and belts can cut fingers and hands and catch loose clothing.

1. Keep all doors, panels, covers, and guards closed and securely in place.
2. Stop engine before installing or connecting unit.
3. Have only qualified people remove guards or covers for maintenance and troubleshooting as necessary.
4. To prevent accidental starting during servicing, disconnect negative (-) battery cable from battery.



SPARKS can cause BATTERY GASES TO EXPLODE; BATTERY ACID can burn eyes and skin.

Batteries contain acid and generate explosive gases.

1. Always wear a face shield when working on a battery.
2. Stop engine before disconnecting or connecting battery cables.
3. Do not allow tools to cause sparks when working on a battery.
4. Do not use welder to charge batteries or jump start vehicles.

STEAM AND PRESSURIZED HOT COOLANT can burn face, eyes, and skin.

The coolant in the radiator can be very hot and under pressure.

1. Do not remove radiator cap when engine is hot. Allow engine to cool.
2. Wear gloves and put a rag over cap area when removing cap.
3. Allow pressure to escape before completely removing cap.

WARNING: This product, when used for welding or cutting, produces fumes or gases which contain chemicals known to the State of California to cause birth defects and, in some cases, cancer. (California Health & Safety Code Sec. 25249.5 et seq.)

NOTE: Considerations About Welding And The Effects Of Low Frequency Electric And Magnetic Fields

The following is a quotation from the General Conclusions Section of the U.S. Congress, Office of Technology Assessment, Biological Effects of Power Frequency Electric & Magnetic Fields — Background Paper, OTA-BP-E-63 (Washington, DC: U.S. Government Printing Office, May 1989): "... there is now a very large volume of scientific findings based on experiments at the cellular level and from studies with animals and people which clearly establish that low frequency magnetic fields can interact with, and produce changes in, biological systems. While most of this work is of very high quality, the results are complex. Current scientific understanding does not yet allow us to interpret the evidence in a single coherent framework. Even more frustrating, it does not yet allow us to draw definite conclusions about questions of possible risk or to offer clear science-based advice on strategies to minimize or avoid potential risks."

To reduce magnetic fields in the workplace, use the following procedures:

1. Keep cables close together by twisting or taping them.
2. Arrange cables to one side and away from the operator.
3. Do not coil or drape cables around the body.
4. Keep welding power source and cables as far away from body as practical.

About Pacemakers:

The above procedures are among those also normally recommended for pacemaker wearers. Consult your doctor for complete information.

PRINCIPAL SAFETY STANDARDS

Safety in Welding and Cutting, ANSI Standard Z49.1, from American Welding Society, 550 N.W. LeJeune Rd., Miami, FL 33126.

Safety and Health Standards, OSHA 29 CFR 1910, from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Recommended Safe Practices for the Preparation for Welding and Cutting of Containers That Have Held Hazardous Substances, American Welding Society Standard AWS F4.1, from American Welding Society, 550 N.W. LeJeune Rd., Miami, FL 33126.

National Electrical Code, NFPA Standard 70, from National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

Safe Handling of Compressed Gases in Cylinders, CGA Pamphlet P-1, from Compressed Gas Association, 1235 Jefferson Davis Highway, Suite 501, Arlington, VA 22202.

Code for Safety in Welding and Cutting, CSA Standard W117.2, from Canadian Standards Association, Standards Sales, 178 Rexdale Boulevard, Rexdale, Ontario, Canada M9W 1R3.

Safe Practices for Occupation and Educational Eye and Face Protection, ANSI Standard Z87.1, from American National Standards Institute, 1430 Broadway, New York, NY 10018.

Cutting and Welding Processes, NFPA Standard 51B, from National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

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PRECAUTIONS DE SECURITE EN SOUDAGE A L'ARC

MISE EN GARDE

LE SOUDAGE A L'ARC EST DANGEREUX

PROTEGEZ-VOUS, AINSI QUE LES AUTRES, CONTRE LES BLESSURES GRAVES POSSIBLES OU LA MORT. NE LAISSEZ PAS LES ENFANTS S'APPROCHER, NI LES PORTEURS DE STIMULATEUR CARDIAQUE (A MOINS QU'ILS N'AIENT CONSULTE UN MEDECIN). CONSERVEZ CES INSTRUCTIONS. LISEZ LE MANUEL D'OPERATION OU LES INSTRUCTIONS AVANT D'INSTALLER, UTILISER OU ENTRETENIR CET EQUIPEMENT.

Les produits et procédés de soudage peuvent sauser des blessures graves ou la mort, de même que des dommages au reste du matériel et à la propriété, si l'utilisateur n'adhère pas strictement à toutes les règles de sécurité et ne prend pas les précautions nécessaires.

En soudage et coupage, des pratiques sécuritaires se sont développées suite à l'expérience passée. Ces pratiques doivent être apprises par étude ou entraînement avant d'utiliser l'equipement. Toute personne n'ayant pas suivi un entraînement intensif en soudage et coupage ne devrait pas tenter de souder. Certaines pratiques concernent les équipements raccordés aux lignes d'alimentation alors que d'autres s'adressent aux groupes électrogènes.

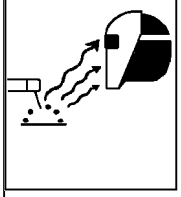
La norme Z49.1 de l'American National Standard, intitulée "SAFETY IN WELDING AND CUTTING" présente les pratiques sécuritaires à suivre. Ce document ainsi que d'autres guides que vous devriez connaître avant d'utiliser cet équipement sont présentés à la fin de ces instructions de sécurité.

SEULES DES PERSONNES QUALIFIEES DOIVENT FAIRE DES TRAVAUX D'INSTALLATION, DE REPARATION, D'ENTRETIEN ET D'ESSAI.

L'ELECTROCUTION PEUT ETRE MORTELLE.

Une décharge électrique peut tuer ou brûler gravement. L'électrode et le circuit de soudage sont sous tension dès la mise en circuit. Le circuit d'alimentation et les circuits internes de l'équipement sont aussi sous tension dès la mise en marche. En soudage automatique ou semi-automatique avec fil, ce dernier, le rouleau ou la bobine de fil, le logement des galets d'entrainement et toutes les pièces métalliques en contact avec le fil de soudage sont sous tension. Un équipement inadéquatement installé ou inadéquatement mis à la terre est dangereux.

1. Ne touchez pas à des pièces sous tension.
2. Portez des gants et des vêtements isolants, secs et non troués.
3. Isolez-vous de la pièce à souder et de la mise à la terre au moyen de tapis isolants ou autres.
4. Déconnectez la prise d'alimentation de l'équipement ou arrêtez le moteur avant de l'installer ou d'en faire l'entretien. Bloquez le commutateur en circuit ouvert ou enlevez les fusibles de l'alimentation afin d'éviter une mise en marche accidentelle.
5. Veuillez à installer cet équipement et à le mettre à la terre selon le manuel d'utilisation et les codes nationaux, provinciaux et locaux applicables.
6. Arrêtez tout équipement après usage. Coupez l'alimentation de l'équipement s'il est hors d'usage ou inutilisé.
7. N'utilisez que des porte-électrodes bien isolés. Ne jamais plonger les porte-électrodes dans l'eau pour les refroidir. Ne jamais les laisser traîner par terre ou sur les pièces à souder. Ne touchez pas aux porte-électrodes raccordés à deux sources de courant en même temps. Ne jamais toucher quelqu'un d'autre avec l'électrode ou le porte-électrode.
8. N'utilisez pas de câbles électriques usés, endommagés, mal épissés ou de section trop petite.
9. N'enroulez pas de câbles électriques autour de votre corps.
10. N'utilisez qu'une bonne prise de masse pour la mise à la terre de la pièce à souder.
11. Ne touchez pas à l'électrode lorsqu'en contact avec le circuit de soudage (terre).
12. N'utilisez que des équipements en bon état. Réparez ou remplacez aussitôt les pièces endommagées.
13. Dans des espaces confinés ou mouillés, n'utilisez pas de source de courant alternatif, à moins qu'il soit muni d'un réducteur de tension. Utilisez plutôt une source de courant continu.
14. Portez un harnais de sécurité si vous travaillez en hauteur.
15. Fermez solidement tous les panneaux et les capots.



LE RAYONNEMENT DE L'ARC PEUT BRÛLER LES YEUX ET LA PEAU; LE BRUIT PEUT ENDOMMAGER L'OUIE.

L'arc de soudage produit une chaleur et des rayons ultraviolets intenses, susceptibles de brûler les yeux et la peau. Le bruit causé par certains procédés peut endommager l'ouïe.

1. Portez une casque de soudeur avec filtre oculaire de nuance appropriée (consultez la norme ANSI Z49 indiquée ci-après) pour vous protéger le visage et les yeux lorsque vous soudez ou que vous observez l'exécution d'une soudure.
2. Portez des lunettes de sécurité approuvées. Des écrans latéraux sont recommandés.
3. Entourez l'aire de soudage de rideaux ou de cloisons pour protéger les autres des coups d'arc ou de l'éblouissement; avertissez les observateurs de ne pas regarder l'arc.
4. Portez des vêtements en matériaux ignifuges et durables (laine et cuir) et des chaussures de sécurité.
5. Portez un casque antibruit ou des bouchons d'oreille approuvés lorsque le niveau de bruit est élevé.

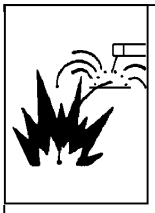
SELECTION DES NUANCES DE FILTRES OCULAIRES POUR LA PROTECTION DES YEUX EN COUPAGE ET SOUDAGE
(selon AWS A 8.2-73)

Opération de Coupage ou soudage	Dimension d'électrode ou Epaisseur de métal ou Intensité de courant	Nuance de de filtre oculaire
Brasage tendre au chalumeau	toutes conditions	2
Brasage fort au chalumeau	toutes conditions	3 ou 4
Oxycoupage		
mince	moins de 1 po. (25 mm)	2 ou 3
moyen	de 1 à 6 po. (25 à 150 mm)	4 ou 5
épais	plus de 6 po. (150 mm)	5 ou 6
Soudage aux gaz		
mince	moins de 1/8 po. (3 mm)	4 ou 5
moyen	de 1/8 à 1/2 po. (3 à 12 mm)	5 ou 6
épais	plus de 1/2 po. (12 mm)	6 ou 8
Soudage à l'arc avec	moins de 5/32 po. (4 mm)	10
electrode enrobées (SMAW)	de 5/32 à 1/4 po. (4 à 6.4 mm)	12
	plus de 1/4 po. (6.4 mm)	14
Soudage à l'arc sous gaz avec fil plein (GMAW)		
métaux non-ferreux	toutes conditions	11
métaux ferreux	toutes conditions	12
Soudage à l'arc sous gaz avec électrode de tungstène (GTAW)	toutes conditions	12
Soudage à l'hydrogène atomique (AHW)	toutes conditions	12
Soudage à l'arc avec électrode de carbone (CAW)	toutes conditions	12
Soudage à l'arc Plasma (PAW)	toutes dimensions	12
Gougeage Air-Arc avec électrode de carbone		
mince		12
épais		14
Coupage à l'arc Plasma (PAC)		
mince	moins de 300 ampères	9
moyen	de 300 à 400 ampères	12
épais	plus de 400 ampères	14

LES VAPEURS ET LES FUMEES SONT DANGEREUSES POUR LA SANTE.

Le soudage dégage des vapeurs et des fumées dangereuses à respirer.

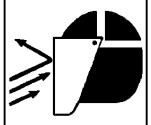
1. Eloignez la tête des fumées pour éviter de les respirer.
2. A l'intérieur, assurez-vous que l'aire de soudage est bien ventilée ou que les fumées et les vapeurs sont aspirées à l'arc.
3. Si la ventilation est inadequate, portez un respirateur à adduction d'air approuvé.
4. Lisez les fiches signalétiques et les consignes du fabricant relatives aux métaux, aux produits consummables, aux revêtements et aux produits nettoyants.
5. Ne travaillez dans un espace confiné que s'il est bien ventilé; sinon, portez un respirateur à adduction d'air. Les gaz protecteurs de soudage peuvent déplacer l'oxygène de l'air et ainsi causer des malaises ou la mort. Assurez-vous que l'air est propre à la respiration.
6. Ne soudez pas à proximité d'opérations de dégraissage, de nettoyage ou de pulvérisation. La chaleur et les rayons de l'arc peuvent réagir avec des vapeurs et former des gaz hautement toxiques et irritants.
7. Ne soudez des tôles galvanisées ou plaquées au plomb ou au cadmium que si les zones à souder ont été grattées à fond, que si l'espace est bien ventilé; si nécessaire portez un respirateur à adduction d'air. Car ces revêtements et tout métal qui contient ces éléments peuvent dégager des fumées toxiques au moment du soudage.



LE SOUDAGE PEUT CAUSER UN INCENDIE OU UNE EXPLOSION

L'arc produit des étincellies et des projections. Les particules volantes, le métal chaud, les projections de soudure et l'équipement surchauffé peuvent causer un incendie et des brûlures. Le contact accidentel de l'électrode ou du fil-électrode avec un objet métallique peut provoquer des étincelles, un échauffement ou un incendie.

1. Protégez-vous, ainsi que les autres, contre les étincelles et du métal chaud.
2. Ne soudez pas dans un endroit où des particules volantes ou des projections peuvent atteindre des matériaux inflammables.
3. Enlevez toutes matières inflammables dans un rayon de 10, 7 mètres autour de l'arc, ou couvrez-les soigneusement avec des bâches approuvées.
4. Méfiez-vous des projections brulantes de soudage susceptibles de pénétrer dans des aires adjacentes par de petites ouvertures ou fissures.
5. Méfiez-vous des incendies et gardez un extincteur à portée de la main.
6. N'oubliez pas qu'une soudure réalisée sur un plafond, un plancher, une cloison ou une paroi peut enflammer l'autre côté.
7. Ne soudez pas un récipient fermé, tel un réservoir ou un baril.
8. Connectez le câble de soudage le plus près possible de la zone de soudage pour empêcher le courant de suivre un long parcours inconnu, et prévenir ainsi les risques d'électrocution et d'incendie.
9. Ne dégelez pas les tuyaux avec un source de courant.
10. Otez l'électrode du porte-électrode ou coupez le fil au tube-contact lorsqu'inutilisé après le soudage.
11. Portez des vêtements protecteurs non huileux, tels des gants en cuir, une chemise épaisse, un pantalon revers, des bottines de sécurité et un casque.



LES ETINCELLES ET LES PROJECTIONS BRULANTES PEUVENT CAUSER DES BLESSURES.

Le piquage et le meulage produisent des particules métalliques volantes. En refroidissant, la soudure peut projeter du éclats de laitier.

1. Portez un écran facial ou des lunettes protectrices approuvées. Des écrans latéraux sont recommandés.
2. Portez des vêtements appropriés pour protéger la peau.

LES BOUTEILLES ENDOMMAGEES PEUVENT EXPLOSER

Les bouteilles contiennent des gaz protecteurs sous haute pression. Des bouteilles endommagées peuvent exploser. Comme les bouteilles font normalement partie du procédé de soudage, traitez-les avec soin.

1. Protégez les bouteilles de gaz comprimé contre les sources de chaleur intense, les chocs et les arcs de soudage.
2. Enchainez verticalement les bouteilles à un support ou à un cadre fixe pour les empêcher de tomber ou d'être renversées.
3. Eloignez les bouteilles de tout circuit électrique ou de tout soudage.
4. Empêchez tout contact entre une bouteille et une électrode de soudage.
5. N'utilisez que des bouteilles de gaz protecteur, des détendeurs, des boyauxs et des raccords conçus pour chaque application spécifique; ces équipements et les pièces connexes doivent être maintenus en bon état.
6. Ne placez pas le visage face à l'ouverture du robinet de la bouteille lors de son ouverture.
7. Laissez en place le chapeau de bouteille sauf si en utilisation ou lorsque raccordé pour utilisation.
8. Lisez et respectez les consignes relatives aux bouteilles de gaz comprimé et aux équipements connexes, ainsi que la publication P-1 de la CGA, identifiée dans la liste de documents ci-dessous.

MISE EN GARDE — LES MOTEURS PEUVENT ETRE DANGEREUX

LES GAZ D'ECHAPPEMENT DES MOTEURS PEUVENT ETRE MORTELS.

Les moteurs produisent des gaz d'échappement nocifs.

1. Utilisez l'équipement à l'extérieur dans des aires ouvertes et bien ventilées.

LE CARBURANT PEUR CAUSER UN INCENDIE OU UNE EXPLOSION.

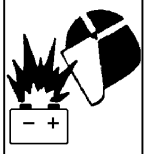
Le carburant est hautement inflammable.

1. Arrêtez le moteur avant de vérifier le niveau de carburant ou de faire le plein.
2. Ne faites pas le plein en fumant ou proche d'une source d'étincelles ou d'une flamme nue.
3. Si c'est possible, laissez le moteur refroidir avant de faire le plein de carburant ou d'en vérifier le niveau au début du soudage.
4. Ne faites pas le plein de carburant à ras bord: prévoyez de l'espace pour son expansion.
5. Faites attention de ne pas renverser de carburant. Nettoyez tout carburant renversé avant de faire démarrer le moteur.

DES PIECES EN MOUVEMENT PEUVENT CAUSER DES BLESSURES.

Des pièces en mouvement, tels des ventilateurs, des rotors et des courroies peuvent couper doigts et mains, ou accrocher des vêtements amples.

1. Assurez-vous que les portes, les panneaux, les capots et les protecteurs soient bien fermés.
2. Avant d'installer ou de connecter un système, arrêtez le moteur.
3. Seules des personnes qualifiées doivent démonter des protecteurs ou des capots pour faire l'entretien ou le dépannage nécessaire.
4. Pour empêcher un démarrage accidentel pendant l'entretien, débranchez le câble d'accumulateur à la borne négative.
5. N'approchez pas les mains ou les cheveux de pièces en mouvement; elles peuvent aussi accrocher des vêtements amples et des outils.
6. Réinstallez les capots ou les protecteurs et fermez les portes après des travaux d'entretien et avant de faire démarrer le moteur.



DES ETINCELLES PEUVENT FAIRE EXPLOSER UN ACCUMULATEUR; L'ELECTROLYTE D'UN ACCUMU-LATEUR PEUT BRULER LA PEAU ET LES YEUX.

Les accumulateurs contiennent de l'électrolyte acide et dégagent des vapeurs explosives.

1. Portez toujours un écran facial en travaillant sur un accumu-lateur.
2. Arrêtez le moteur avant de connecter ou de déconnecter des câbles d'accumulateur.
3. N'utilisez que des outils anti-étincelles pour travailler sur un accumulateur.
4. N'utilisez pas une source de courant de soudage pour charger un accumulateur ou survolter momentanément un véhicule.

LA VAPEUR ET LE LIQUIDE DE REFROIDISSEMENT BRULANT SOUS PRESSION PEUVENT BRULER LA PEAU ET LES YEUX.

Le liquide de refroidissement d'un radiateur peut être brûlant et sous pression.

1. N'ôtez pas le bouchon de radiateur tant que le moteur n'est pas refroidi.
2. Mettez des gants et posez un torchon sur le bouchon pour l'ôter.
3. Laissez la pression s'échapper avant d'ôter complètement le bouchon.

PRINCIPALES NORMES DE SECURITE

Safety in Welding and Cutting, norme ANSI Z49.1, American Welding Society, 550 N.W. LeJeune Rd., Miami, FL 33128.

Safety and Health Standards, OSHA 29 CFR 1910, Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Recommended Safe Practices for the Preparation for Welding and Cutting of Containers That Have Held Hazardous Substances, norme AWS F4.1, American Welding Society, 550 N.W. LeJeune Rd., Miami, FL 33128.

National Electrical Code, norme 70 NFPA, National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

Safe Handling of Compressed Gases in Cylinders, document P-1, Compressed Gas Association, 1235 Jefferson Davis Highway, Suite 501, Arlington, VA 22202.

Code for Safety in Welding and Cutting, norme CSA W117.2 Association canadienne de normalisation, Standards Sales, 276 Rexdale Boulevard, Rexdale, Ontario, Canada M9W 1R3.

Safe Practices for Occupation and Educational Eye and Face Protection, norme ANSI Z87.1, American National Standards Institute, 1430 Broadway, New York, NY 10018.

Cutting and Welding Processes, norme 51B NFPA, National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

DESCRIPTION OF EQUIPMENT

General

The Thermal Arc Dragster 80 is a light weight, easy to use, 80 amp stick electrode (SMAW) welder. It is designed for welding thin gauge (1/8 in. or less) mild and stainless steels. It comes standard with the following:

10 Ft. workpiece (ground) cable and clamp

15 Ft. electrode cable

TWECO® brand electrode holder

2 25mm twist lock male connectors

5 Ft. carrying strap

Sample pack of Thermal Arc 3/32 in. 6013 electrodes

Rating

Table 3-1 shows the input and output ratings.

Input: 115 VAC, 60 Hz, 1 Phase Maximum Open Circuit Voltage: 50 VDC				
	IEC - 60974 Ratings			CSA Ratings
Duty Cycle	100%	60%	10%	20%
Input Current	15	19	32	19
Output Amps	40	50	80	60
Output Volts	21.6	22.0	23.2	18

Refer to Figure 3-1 for the following descriptions:

CONTROL KNOB — This knob controls the welding output current. The current can be varied from approximately 10 amps (setting 1) to 80 amps (setting 8). 1/16 inch rods should use a setting of around 4 (40 amps), 3/32 inch rods around 6 (60 amps).

OVERTEMPERATURE LIGHT — This light will come on if the duty cycle of the machine is exceeded and overheats it. If the light comes on, it will turn off the welding circuit, but leave the fan on. The unit must be allowed to cool for at least 10 minutes. The welding circuit will remain off until the ON/OFF switch is turned off, then back on.

ON/OFF SWITCH — Turns the Dragster 80 on and off. When on, the switch will be lit up.

WARNING: WHEN THE UNIT IS TURNED ON THERE WILL BE OPEN CIRCUIT VOLTAGE ON THE OUTPUT TERMINALS OF THE MACHINE. TO AVOID ELECTRIC SHOCK DO NOT HANDLE EXPOSED CONDUCTORS ATTACHED TO THE POWER SOURCE TERMINALS WITHOUT PROPER PROTECTIVE CLOTHING AND GLOVES.

OUTPUT TERMINALS — These 25mm twist lock connectors allow for easy connection of the welding cables. For most applications (such as 6013 electrodes) the ground cable attaches to the – terminal and the electrode cable attaches to the + terminal. To install cables, simply insert the male connector into the female, and twist clockwise until it tightens into place (about 1/2 turn).

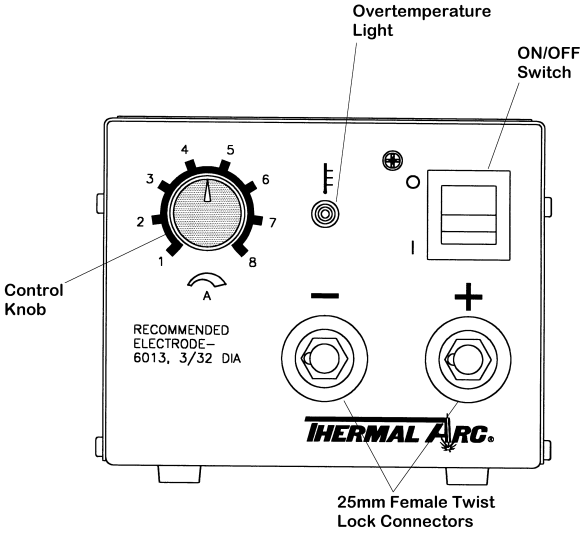


Figure 3-1

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ASSEMBLY

Twist Lock Connectors

Assemble the male twist lock connectors to both the 10 Ft. ground and 15 Ft. electrode cables as follows (see Figure 4-1).

1. Slip the RUBBER INSULATOR onto the cable as shown.
2. Wrap the piece of COPPER STRIP around a small rod (such as a pencil), then insert it into the end of the BRASS CONNECTOR.
3. Remove the 3/4 in. cut piece of insulation from the end of the cable.
4. Insert the stripped end of cable into the BRASS CONNECTOR, making sure it is also inside the rolled up COPPER STRIP.
5. Tighten the SET SCREW.
6. Push the RUBBER INSULATOR over the BRASS CONNECTOR. Make sure it completely covers the CONNECTOR, such that when the CONNECTOR is attached to the Dragster 80, there is no exposed metal at the joint.

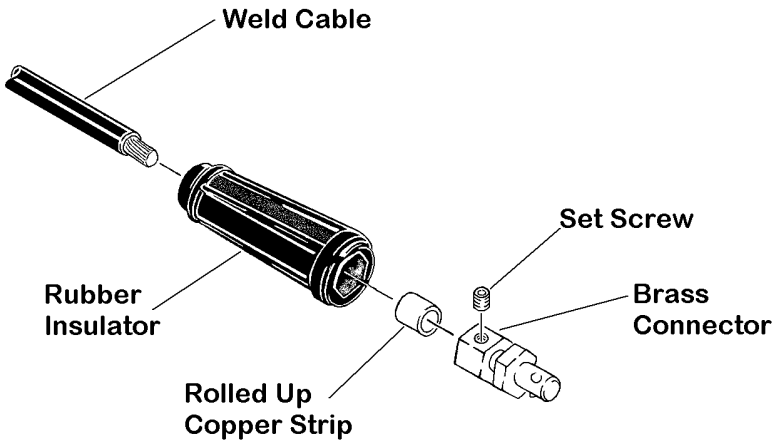

Figure 4-1

Electrode Holder

The Electrode Holder goes on the 15 Ft. cable, on the end that has a lug crimped on it (see Figure 4-2).

1. Slip the PLASTIC HOUSING supplied with the TWECO® ELECTRODE HOLDER onto the CABLE.
2. Insert the lugged end of the CABLE into the ELECTRODE HOLDER.
3. Tighten the SET SCREW down against the LUG. LUG should be positioned so when SET SCREW is tightened, it will engage into the crimping indentation on the LUG.
4. Align the SMALL HOLE in the PLASTIC HOUSING with the SNAP-PIN. Push the PLASTIC HOUSING onto the ELECTRODE HOLDER until it snaps (locks) into position.

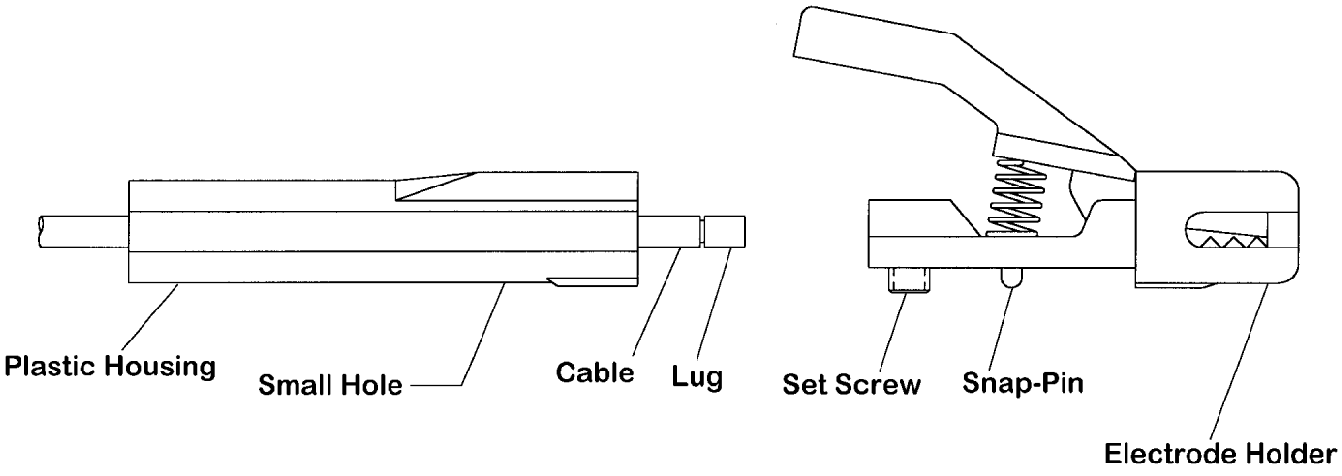

Figure 4-2

Carry Strap

Figure 4-3 shows how to attach the carry strap.

WARNING: DO NOT OPERATE THIS UNIT WHILE CARRYING IT. ALWAYS PLACE THE UNIT ON THE GROUND OR OTHER SOLID STRUCTURE BEFORE OPERATING.

NOTE: The carry strap is only intended to aid in transporting the unit from job to job. Make sure the strap is kept clear from the unit while operating it. Never operate the unit while holding it. Read and understand all warnings in this manual.

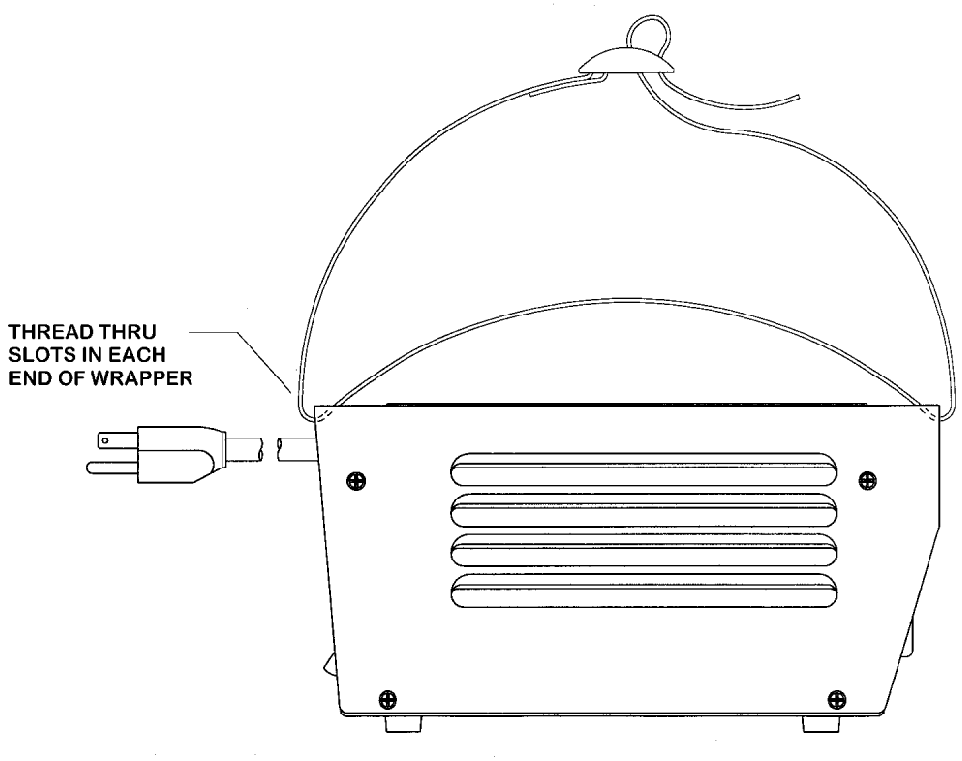

Figure 4-3

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INSTALLATION

Location

For best operating characteristics and longest unit life, take care in selecting an installation site. Avoid locations exposed to high humidity, dust, high ambient temperature, or corrosive fumes. Moisture can condense on electrical components, causing corrosion or shorting of circuits. Dirt on components helps retain this moisture and also increases wear on moving parts.

Adequate air circulation is needed at all times in order to assure proper operation. Provide a minimum of 12 inches (305 mm) of free air space at front, rear, and sides of the unit. Make sure that the ventilator openings are not obstructed.

Safety

Refer to additional installation instructions under the SAFETY INSTRUCTIONS AND WARNINGS chapter included in this manual.

Grounding

The internal frame of this welding machine is grounded for personnel safety. Where grounding is mandatory under state or local codes, it is the responsibility of the user to comply with all applicable rules and regulations. Where no state or local codes exist, it is recommended that the National Electrical Code be followed.

Electrical Input Requirements

Plug the input cord into a properly grounded and protected (fuse or circuit breaker) 115 V AC, 20 amp receptacle.

CAUTION: Consult nameplate for proper input voltage and input amperage. The method of installation, conductor size, and overcurrent protection shall conform to the requirements of the local electrical code. All installation wiring and machine connection shall be done by a competent electrician.

The National Electrical Code (Article 630B., 1984 Edition) provides standards for amperage handling capability of supply conductors based on the duty cycle of the welding power source. This unit has a 10% duty cycle (1 minute of every 10 minutes can be used for welding); therefore the cord supplied with this unit complies with these standards. Ensure that the building supply and receptacle comply with NEC standards and any additional state and local codes

NOTE: The supply wiring for the welding power source must be capable of handling a minimum of 20 amps. The welding power source must be the only load connected to the supply circuit. Poor unit performance or frequently opening line fuses or circuit breakers can result from an inadequate or improper supply.

NOTE: Use Table 5-1 for selection of the minimum wire size for extension cords.

CAUTION: Do not connect the DRAGSTER 80 to an input power supply with a rated voltage that is greater than 125 volts.

WARNING: Do not remove the power cord ground prong.

WIRE SIZE	LENGTH OF EXTENSION CORD
4	50 FEET OR LESS
12	50 FEET TO 200 FEET

Table 5-1

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OPERATION

1. Connect the welding leads to the Dragster 80 with the correct polarity. Figure 6-1 shows a typical connection for electrodes (such as 6013) that require a positive connection. This is called DCEP (Direct Current Electrode Positive). For electrodes that require a negative connection (DCEN) simply switch the cables.
2. Turn the unit ON.
3. Set the Control Knob to the desired output.
4. The unit is now ready to weld.
5. After the weld is complete, turn the unit OFF to remove open circuit voltage from the output terminals.

WARNING: ONCE THE UNIT IS TURNED ON THERE WILL BE OPEN CIRCUIT VOLTAGE ON THE OUTPUT TERMINALS OF THE MACHINE. TO AVOID ELECTRIC SHOCK DO NOT HANDLE EXPOSED CONDUCTORS ATTACHED TO THE POWER SOURCE TERMINALS WITHOUT PROPER PROTECTIVE CLOTHING AND GLOVES.

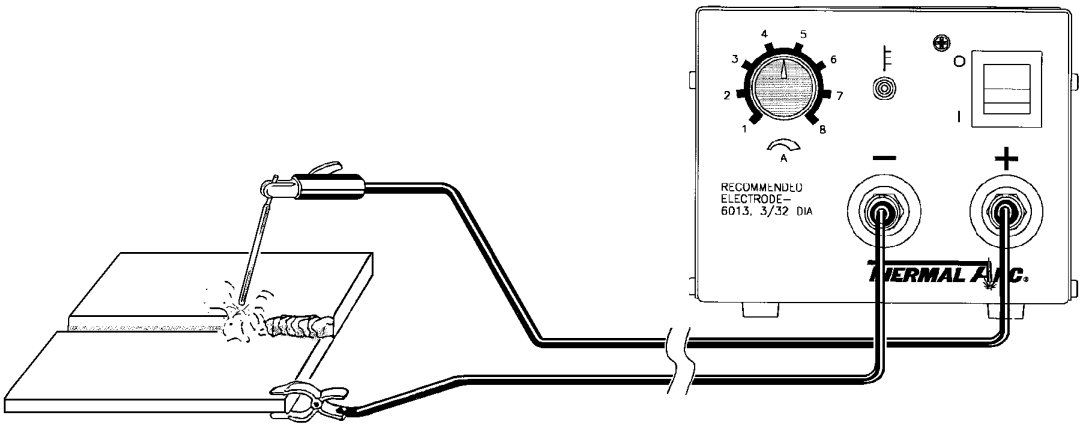

Figure 6-1

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TROUBLESHOOTING

WARNING: DISCONNECT THE INPUT POWER CORD BEFORE CARRYING OUT ANY SERVICE OR REPAIR WORK. HAZARDOUS VOLTAGES ARE PRESENT IN THE MACHINE WHENEVER INPUT POWER IS CONNECTED.

WARNING: ALL SERVICE SHOULD BE PERFORMED BY TRAINED PERSONNEL ONLY.

WARNING: HAZARDOUS VOLTAGES MAY BE PRESENT INSIDE THIS MACHINE FOR SEVERAL MINUTES AFTER POWER IS REMOVED. WAIT 10 MINUTES AFTER REMOVING POWER BEFORE REMOVING COVER. NEVER OPERATE WITH THE COVER REMOVED.

Troubleshooting guide

On/Off switch light does not come on

Unit unplugged.

Blown fuse or tripped breaker.

Make sure the proper size fuse or breaker is being used.

OVERTEMPERATURE LIGHT comes on

Unit has overheated.

Let the unit cool down for at least 10 minutes. Turn power off and back on. Overtemperature light should then go off. Observe duty cycle rating.

Erratic weld output

Check all connections:

Check ground clamp connection to workpiece.

Check electrode connection in electrode holder.

Check twist lock connections to unit.

Check all cable connections.

Low open circuit voltage

Line voltage too low.

Wrong size extension cord.

See Table 5-1.

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PARTS LIST

Equipment Identification:

All identification numbers as described in the Introduction chapter must be furnished when ordering parts or making inquiries. This information is usually found on the nameplate attached to the equipment. Be sure to include any dash numbers following the Specification or Assembly numbers.

How To Use This Parts List:

The Parts List is a combination of an illustration (Figure Number) and a corresponding list of parts which contains a breakdown of the equipment into assemblies, subassemblies, and detail parts. All parts of the equipment are listed except for commercially available hardware, bulk items such as wire, cable, sleeving, tubing, etc., and permanently attached items which are soldered, riveted, or welded to another part. The part descriptions may be indented to show part relationships.

To determine the part number, description, quantity, or application of an item, simply locate the item in question from the illustration and refer to that item number in the corresponding Parts List.

An "Application Code" is used to distinguish parts that are applicable only to certain Specifications and/or Assemblies. This code is found in the right-most column of the Parts List. If an item in the Parts List applies to all Specifications or Assemblies, the word "ALL" will be in the Application Code column. Refer to the following list to determine the appropriate Application Codes for the Specifications or Assemblies covered by this manual. If only the assembly or specification number is listed, the use of an Application Code does not apply to this manual.

SPECIFICATION NUMBER

100040-1

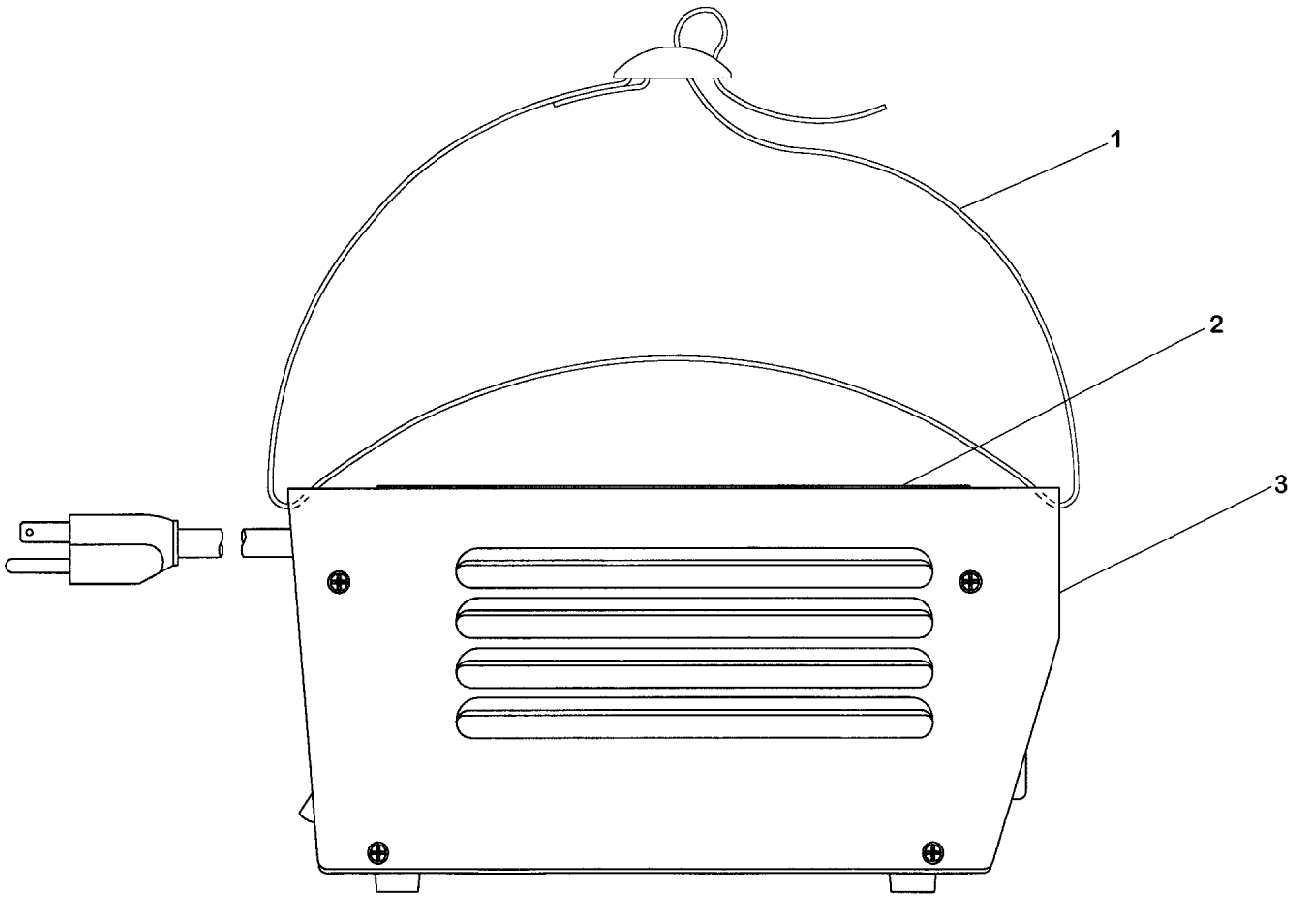
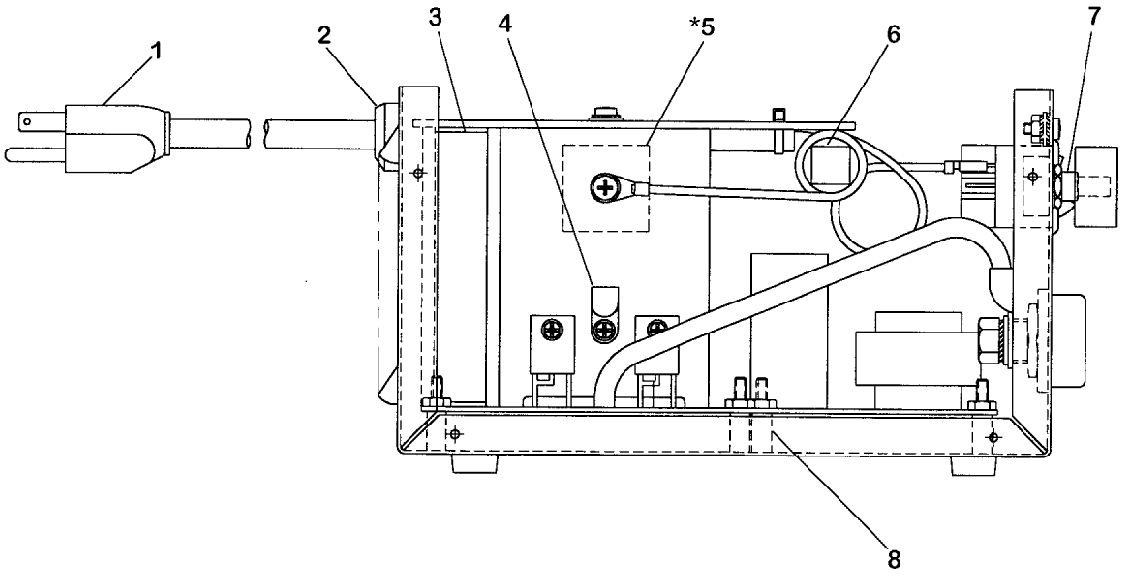


Figure 8-1

Parts List for Figure 8-1

Item No	Part Number	Description	Qty per Assy
	100040-1	Dragster 80	1
1	830558	. Strap - Carry	1
2	830561	. Label - Warning	1
3	830543	. Wrapper	1



*MOUNTED ON OPPOSITE HEATSINK

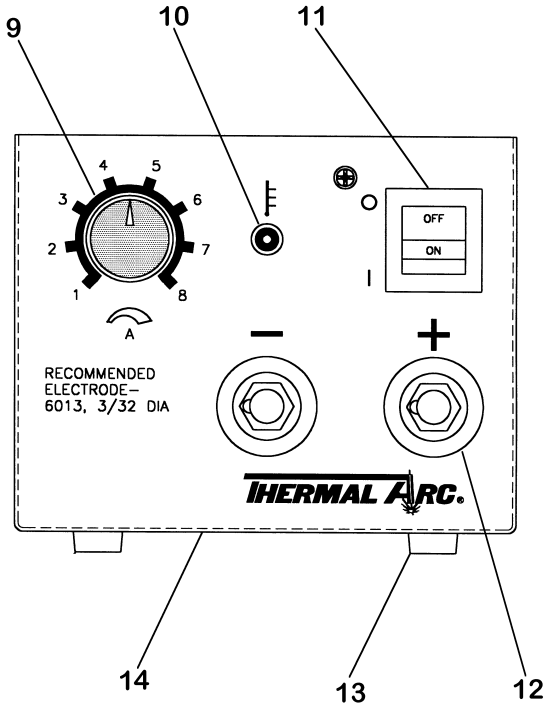


Figure 8-2

Parts List for Figure 8-2

Item No	Part Number	Description	Qty per Assy
	100040-1	Dragster 80	1
1	375432-18	. Cord - Power	1
2	TRY-119-14	. Bushing - Strain Relief	1
3	830629	. Package - Fan	1
4	830630	. Thermostat	1
5	409554-2	. Bridge - Diode	1
6	830631	. Package - Choke	1
7	830545	. Potentiometer	1
8	204600-1	. Spacer	6
9	830567	. Knob	1
10	203300-3	. LED - Yellow, W/Lens	1
11	830484-2	. Switch - ON/OFF	1
12	10-6127	. Connector - Female	2
13	830562	. Foot - Rubber	4
14	830542	. Base	1
—	10-6128	. Connector - Male	2
—	*830556	. Cables - Weld Output	1
—	830559	. Clamp - Electrode Holder	1

— Not Illustrated

* Includes Electrode Cable And Work Cable With Ground Clamp

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DIAGRAMS

- Note the model and specification number shown on the equipment nameplate.
- Locate these numbers in the model and specification number columns below.
- Use only those diagrams and instructions that are applicable.

MODEL	SPECIFICATION NUMBER	**CONNECTION & SCHEMATIC DIAGRAM**
DRAGSTER	100040-1	830579

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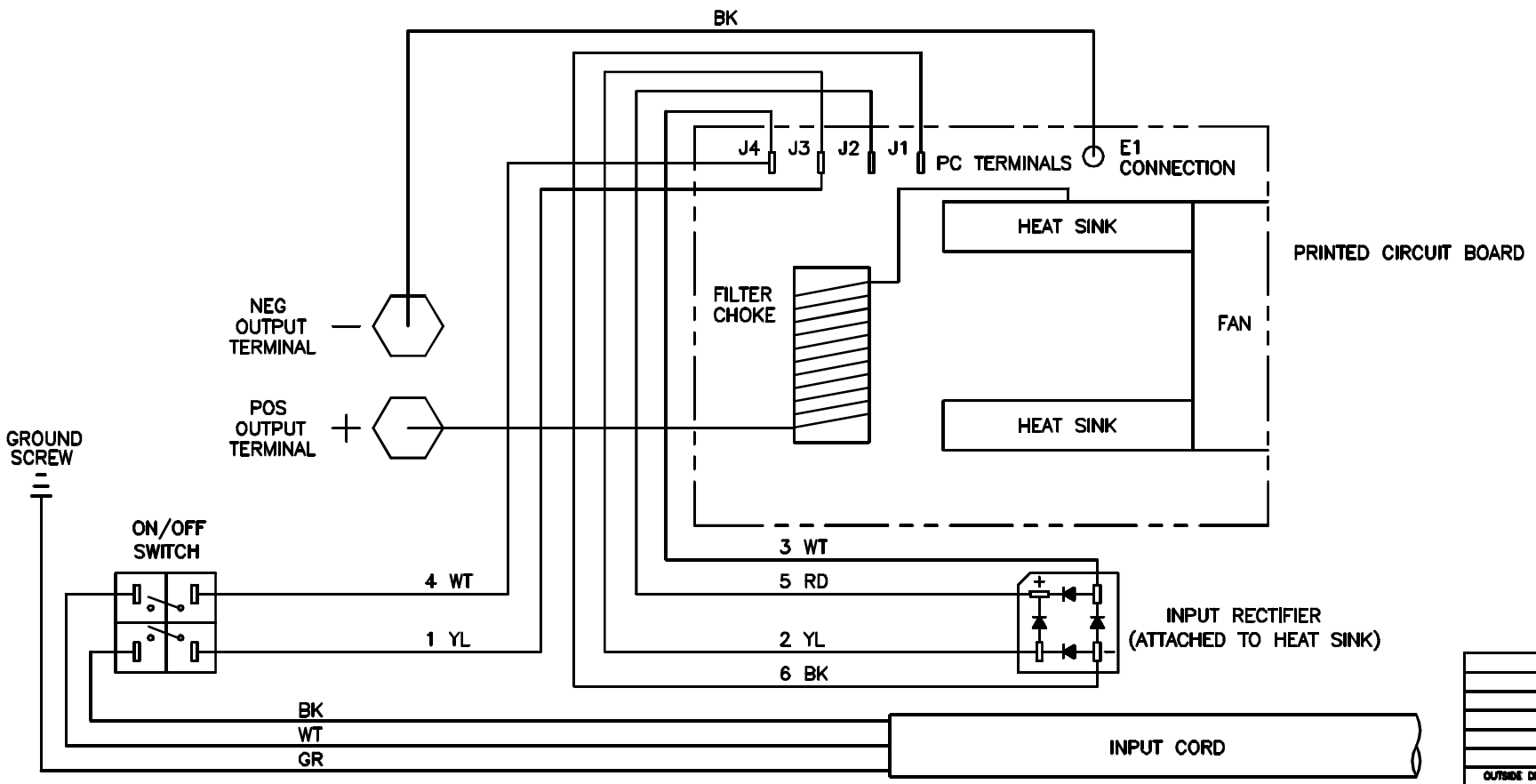

CHANGE RECORD	
E.C. No.	DATE

COLOR CODE			
BK	BLACK	RD	RED
BL	BLUE	TN	TAN
BR	BROWN	VT	VIOLET(PURPLE)
GN	GREEN	WT	WHITE
GY	GRAY	YL	YELLOW
OR	ORANGE	D	DARK (PREFIX)
PK	PINK	L	LIGHT(PREFIX)

DIAGRAM EXPLANATION

5 — 27 RD

- PART LOCATION NUMBER (END OF WIRE)
- WIRE NUMBER
- WIRE COLOR
- ABOVE OR LEFT OF WIRE

FILE NAME	830579
PLOT DATE	4–16–99

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES/MILLIMETERS
TOLERANCES BELOW APPLY EXCEPT FOR VENDOR DESIGNED PARTS AND ITEMS. PRODUCED TO RECOGNIZED STANDARDS.

FRACT. INCH ± ~ | ANGLES ± 3°

DECIMAL–INCH	METRIC
.0 ± .1	0. ± 1.0mm
.00 ± .02	0.0 ± 0.4mm
.000 ± .003	0.00 ± 0.10mm

DO NOT SCALE DRAWING

CONFIDENTIAL: This drawing, including all information contained thereon, is the exclusive and confidential property of Thermal Arc Corporation of Troy, Ohio 45373 . This drawing is not to be copied, reproduced, delivered or disclosed to others, in whole or in part, except with express written permission.

THERMAL ARC®
A THERMADYNE Company
TROY, OHIO 45373, U.S.A.

FINISH CODE PER 800001: NONE

ACTIVITY	REPLACED BY	REPLACES
MATERIAL NO.	QUANTITY–U.M.	COMM. CLS.

MATERIAL SPEC.

TITLE: DIAGRAM, CONNECTION

DESCRIPTIVE DATA: DRAGSTER 80

DESIGNED	DRAWN	DATE	SCALE
BICK	BESECKER	4–14–99	FULL
CHECKED	APPROVED	RECORDS	ITEM TYPE
	JB	4–14–99	

SIZE: B | DWG. NO. SHEET: 830579

OUTSIDE DISTR.

DISTRIBUTION TABLE

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STATEMENT® OF WARRANTY

LIMITED WARRANTY: Thermal Arc , Inc., A Thermadyne Company, warrants that its products will be free of defects in workmanship or material. Should any failure to conform to this warranty appear within the time period applicable to the Thermal Arc products as stated below, Thermal Arc shall, upon notification thereof and substantiation that the product has been stored, installed, operated, and maintained in accordance with Thermal Arc's specifications, instructions, recommendations and recognized standard industry practice, and not subject to misuse, repair, neglect, alteration, or accident, correct such defects by suitable repair or replacement, at Thermal Arc's sole option, of any components or parts of the product determined by Thermal Arc to be defective.

THERMAL ARC MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED. THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHERS, INCLUDING, BUT NOT LIMITED TO ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.

LIMITATION OF LIABILITY: Thermal Arc shall not under any circumstances be liable for special or consequential damages, such as, but not limited to, damage or loss of purchased or replacement goods, or claims of customers of distributor (hereinafter "Purchaser") for service interruption. The remedies of the Purchaser set forth herein are exclusive and the liability of Thermal Arc with respect to any contract, or anything done in connection therewith such as the performance or breach thereof, or from the manufacture, sale, delivery, resale, or use of any goods covered by or furnished by Thermal Arc whether arising out of contract, negligence, strict tort, or under any warranty, or otherwise, shall not, except as expressly provided herein, exceed the price of the goods upon which such liability is based. No employee, agent, or representative of Thermal Arc is authorized to change this warranty in any way or grant any other warranty.

PURCHASER'S RIGHTS UNDER THIS WARRANTY ARE VOID IF REPLACEMENT PARTS OR ACCESSORIES ARE USED WHICH IN THERMAL ARC'S SOLE JUDGEMENT MAY IMPAIR THE SAFETY OR PERFORMANCE OF ANY THERMAL ARC PRODUCT.

PURCHASER'S RIGHTS UNDER THIS WARRANTY ARE VOID IF THE PRODUCT IS SOLD TO PURCHASER BY NON-AUTHORIZED PERSONS.

Except with regards to the products listed below, this warranty shall remain effective three (3) years from the date Thermal Arc's authorized distributor delivers the product to Purchaser, but in no event more than (4) years from the date Thermal Arc delivers the product to the authorized distributor.

Shorter warranty periods apply to the products listed below. On these products, the warranty is effective for the time stated below beginning on the date that the authorized distributor delivers the products to the Purchaser. Notwithstanding the foregoing, in no event shall the warranty period extend more than the time stated plus one year from the date Thermal Arc delivered the product to the authorized distributor.

	PARTS/LABOR
DRAGSTER 80 POWER MAGNETICS	1 YEAR
DRAGSTER 80 INPUT POWER RECTIFIER	1 YEAR
DRAGSTER 80 PC BOARD	1 YEAR
DRAGSTER 80, ALL OTHER CIRCUITS AND COMPONENTS	1 YEAR
ELECTRODE HOLDER AND LEADS	180 DAYS
REPAIR/REPLACEMENT PARTS	90 DAYS

Warranty repairs or replacement claims under this limited warranty must be submitted to Thermal Arc by an authorized Thermal Arc® repair facility within thirty (30) days of the purchaser's notice of a warranty claim. No transportation costs of any kind will be paid under this warranty. Transportation charges to send products to an authorized warranty repair facility shall be the responsibility of the purchaser. All returned goods shall be at the purchaser's risk and expense. This warranty supersedes all previous Thermal Arc warranties.

Thermal Arc® is a Registered Trademark of Thermadyne Industries Inc.

Effective January 1, 1999